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P.2.IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Belgard, R.

Serial No.: 08/458,479

Filed: 6/2/95

For: Improved Address Translation
Mechanism and Method in a
Computer SystemArt Unit: ~~2303~~ 2309

Examiner: Nguyen, T.

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RESPONSE TO OFFICE ACTIONHonorable Commissioner
of Patents and Trademarks
Washington, D.C. 20231

Dear Sir:

In response to the Office Action mailed August 20, 1996, the Applicant respectfully requests the Examiner to consider the following remarks, which for convenience have been numbered to correspond to the paragraph numbers used in the Office Action:

Re: Paragraph 1: Applicant traverses this objection at the present time, and will submit formal drawings when allowable subject matter is indicated by the Examiner.

Re: Paragraph 2: Applicant thankfully accepts Examiner's suggestion and respectfully requests the title to be changed to: "Address Translation Method and Mechanism Employing Segmentation and Optional Paging". The title has been revised in this Response in accordance with such request.

Re: § 102 Rejections of Paragraphs 3-9: Applicant respectfully draws Examiner's attention to the specification at page 9, lines 21-25. As described there, segmentation units in prior art address

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translation units (that is, address translation units that include independent segmentation and paging) do not include segment descriptors with physical address information (such as a page frame) as recited in Applicant's submitted claims. This is depicted graphically also in Applicant's Figure 2, where it can be seen that the segment descriptor used in the present invention, unlike the prior art, includes page frame information.

Crawford's segment descriptors, to which Examiner particularly refers, do not include any page frame information. Referring to Examiner's reference to Figure 2 of Crawford, this segment descriptor table does not, and cannot, contain page frame information due to the separation of segmentation and paging of Crawford. This can be confirmed by a review of Crawford, and is discussed in Applicant's specification at Page 10 at Line 7 - Page 11 at line 2.

Finally, with reference to Figure 3 of Crawford, what is shown there as an input to the page unit (22a) is a linear address output by the segmentation unit. Nowhere in Figure 3 does Crawford show a segmentation unit storing page frame information. Crawford in fact nowhere reveals such a concept, and by requiring that the segmentation be independent of and separate from pagination, Crawford expressly teaches away from applicant's invention. The present invention improves on the prior art by storing page frame information directly in the segmentation unit. See specification, page 5 at Line 6 - Page 6 at Line 10; Page 10 at Line 17 - Page 11 at Line 2.

Applicant's claimed segment descriptor stores physical address information related to the result of a previous address calculation. The page base information is derived from the page frame known from the immediately prior (in time) address translation on a segment-by-segment basis. The inclusion of this information in the segmentation unit results in a dramatically improved address translation time that is not possible with prior art mechanisms, because the prior art two-step translation (linear address and then physical address) is not needed in most instances.

For the above reasons Applicant suggests that the inventions of independent claims 1, 7 and 8, distinguish over the prior art, and respectfully requests that Examiner reconsider their allowability. Furthermore, claims 2-6 depending from claim 1 further differentiate over the prior art, and are believed to be allowable on this basis as well.

In a similar manner, Applicant submits that the language of independent claims 9, 18, 26 and 34 also distinguish over the prior art, including Crawford. Applicant submits that the claims depending from these independent claims (i.e., 10-17, 19-25, 27-33 and 35-37 respectively) further distinguish over the prior art and are allowable.

Re: § 103 Rejections of Paragraphs 10-14:

With respect to the other § 103 rejections made by the Examiner in paragraphs 10-14, Applicant notes that they were not directed to any argument or impression that there is a teaching or suggestion in the art to include page frame information in the segmentation unit of an address translation unit. As mentioned above by Applicant, the cited art does not in fact include such information, and there is also no teaching or suggestion in such art for this proposition. For this reason, Applicant submits that the claims are also non-obvious in light of the aforementioned art, and should be allowed.

Conclusion

Applicant believes in light of the above that there is no need at this time to address the other § 102 and § 103 rejection issues raised by the Examiner, and therefore traverses these objections at this time. Should the Examiner believe it is necessary or fruitful to discuss any of the above points in person, Applicant is open to a teleconference (408-342-1862) at any convenient time

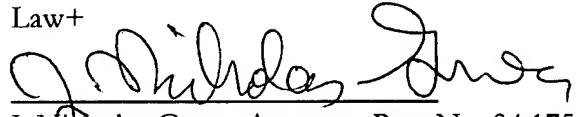
Accordingly, Applicant respectfully submits that the rejections as described in Office Action paragraphs 3-9, under § 102(b) and in paragraphs 10-14 under § 103 have been overcome by the

attached remarks, and withdrawal of the rejections of claims 1-9, 14, 16-20, 24-26, 29-34 and 37, and claims 10-13, 15, 21-23, 27, 28, 35 and 36 is respectfully requested.

Respectfully submitted,

Law+

Date: October 7, 1996


J. Nicholas Gross, Attorney, Reg. No. 34,175

I hereby certify that the foregoing is being deposited with the U.S. Postal Service, postage prepaid, to the Commissioner of Patents and Trademarks, this 7th day of October, 1996.